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ABSTRACT

Equal opportunity for women was last examined by the New York State Board of Regents in 1972. This document contains two papers: (1) a policy paper "Equal Opportunity for Women" prepared by the Regents reaffirming their commitment to gender equity by proposing an action plan; and (2) a background paper, "Equity for Women in the 1990s" reviews in detail the progress of New York State women during the past two decades. The first document is divided into three parts: (1) a perspective for the 1990s on women's equity issues of gender bias, career patterns for women, and new challenges; (2) the regents' policy principles to achieve equal opportunity for women; and (3) a call to action to promote equal opportunity for girls and women. Action strategies are listed for ending gender bias, improving opportunities for the education of women and girls in schools, higher education, and cultural institutions, and improving career opportunities in education, cultural institutions, and the professions. Continued deep-rooted discrimination against women existing in education and employment can be changed only by a major shift in attitude in all areas of education. Affirmative action policies must be required and supported in all education institutions in New York. Activities at every level must encourage and promote equity of educational, economic, and professional outcomes. Nine goals are listed with responsible entities, outcome indicators, and a timeline for accomplishment of each goal. A 13-item reference list is included. The second paper, comprising three-fourths of the document, reviews: (1) the current situation of women including education trends (gaps in achievement, dropout/diploma data, higher education, and educational attainment), employment trends (labor market participation and salaries), and sexual offenses against women (sexual harassment and other offenses); and (2) existing barriers (gender bias in education and employment). The paper concludes by listing ways of helping women reach their maximum potential. Seventeen tables provide statistical data comparing males and females in areas such as mathematics achievement, doctorates awarded, etc. Contains 71 references. (DK)

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Equity for Women in the 1990s

Regents Policy and Action Plan with Supporting Background

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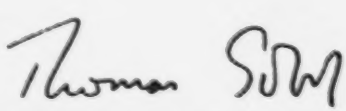
Foreword

In 1972, Congress adopted Title IX as part of the Education Amendments of that year to end discrimination by gender in programs that received Federal funding. In that year, also, the Board of Regents issued a position paper which proposed that educational institutions take the lead in providing equal opportunity for girls and women. In these two decades, some progress has been made. Women no longer face quotas in college admission (indeed, they earn half or more of associate's, bachelor's, and master's degrees); and as a society, we have begun to reexamine our explicit and tacit gender-based stereotypes of what people can do.

Nevertheless, much remains to be done. This policy paper and the background paper accompanying it document the persistence in our educational institutions of unequal treatment and unequal achievement between the sexes — inequities which contribute to unequal career opportunities later on. Women have a disproportionate share of low-paying jobs, are frequently overqualified for their work, and do not get the same economic return on their education as men. This long-standing disparity is harmful to individuals and to society. Women often find it difficult to provide for their families, whether as sole or contributing breadwinners. Their opportunities are curtailed; and our State and nation, competing in a global marketplace, are deprived of much valuable talent.

The goals of this policy paper define an education system that offers equal opportunity to all, regardless of gender. In the coming months and years, the Board of Regents and the State Education Department will work with all members of The University of the State of New York — our schools, colleges, universities, libraries, museums — to speed progress toward gender equity in our education system and, through it, in our society as a whole.



THOMAS SOBOL
President of The University
of the State of New York and Commissioner
of Education

Executive Summary

Equal opportunity for women was last examined by the Board of Regents in 1972, an important year for women in New York. In 1972, Congress passed Title IX as part of the Education Amendments to end discriminatory gender practices in programs that received Federal funding. At that time, the Board of Regents issued a position paper which proposed that educational institutions take the lead in providing equal opportunity for girls and women. In 1992, the Year of the Woman in American politics, there was a renewed interest in women's issues and an appropriate juncture for a reexamination of the status of equal opportunity for women in New York State.

An accompanying background paper, **Equity for Women in the 1990s**, reviews in detail the progress of New York State women during the past two decades. In 1972, the Regents found that they had to focus efforts in three key areas: job opportunities in education, sexual stereotyping in the elementary and secondary schools, and equal opportunities for women in higher and professional education. Some gains have been made over these 20 years, particularly in women's attainment of college degrees. However, research on gender bias, wider attention to the prevalence of sexual harassment, and recognition of a "glass ceiling" in women's advancement help us to understand why the changes have been slow and far short of the level desired. Women continue to be overrepresented in certain traditionally female professions; tend to receive lower pay than men with less education; have tenured faculty positions less often; and continue to be less likely to hold the top educational administration posts. This happens at a time when global competition requires that the talents and leadership of New York women no longer go untapped.

In response to this unacceptable situation, the Regents, in their January 1993 policy paper, reaffirm their commitment to gender equity by proposing an action plan aimed at achieving equal opportunity for girls and women in the 1990s and beyond. To move forward in achieving such improvement, the Regents are establishing specific goals, indicators of progress, and a timetable for action to address the concerns raised by this reexamination of how females have fared in the educational institutions of New York State. The Commissioner of Education and the State Education Department have the responsibility to monitor the outlined goals and provide a comprehensive report on progress made to the Board at the completion of the 1996-97 school year.

Prefatory Note

Two papers are bound together in this document: a policy paper entitled *"Equal Opportunity for Women"* and a background paper which lays out supporting data and information in some detail. The papers were approved by the New York State Board of Regents in January 1993. They will guide the State Education Department's actions, with educators, educational institutions and cultural institutions across the State, to achieve *"Equity for Women in the 1990s."*

The principal writer of both papers is Geraldine Burke of the State Education Department's Office for Planning, Research and Support Services. The Commissioner's Statewide Advisory Council on Equal Opportunity for Women and Girls has given substantial material and moral support and assistance in the research and writing of both papers.

Equal Opportunity for Women:
Regents Policy Paper and Action Plan
for the 1990s

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Perspective for the 1990s: Women's Equity Issues

In 1972, the Regents of The University of the State of New York issued a position paper[1] which proposed that educational institutions take the lead in providing equal opportunity for girls and women. The Regents established guidelines for accomplishing this goal by focusing on job opportunities in education, ending sexual stereotyping in the elementary and secondary schools, and promoting equal opportunity for women in higher and professional education.

In spite of the efforts of the past two decades, the educational system, like the larger society, is still marred by discriminatory attitudes toward women. Some educators themselves, however unintentionally, have been purveyors of cultural attitudes injurious to women's rights. We cannot simply raise the issue of gender equity in education one more time. A comprehensive plan is needed: one that requires the entire educational community to be accountable for making gender equity a reality in New York State.

Some progress has been made to address the lack of representation of women in positions of leadership and to enforce mandates that provide women equal protection under State and Federal law. Heightened awareness of racial and ethnic discrimination helped turn attention to discrimination based on gender, as well. Equity issues in education were addressed with Congressional passage of Title IX as part of the Education Amendments of 1972. Programs receiving Federal funding were prohibited from discriminatory practices based on gender. However, even with this heightened awareness, progress since 1972 in correcting the inequities that women face is still limited, particularly in the areas of education, career opportunity, advancement, and earnings.

This paper focuses on inequalities based on gender. In such a focus, there is no intention to deny the existence of additional burdens imposed in our society by biases based upon such factors as race, ethnicity, language, and disability. Bias against women, however, is fundamental and pervasive. Relief from its effects assists all women to some degree. Therefore, it is the particular scope of this policy paper to call attention to ways in which New Yorkers can work toward the eradication of gender bias.

Gender Bias

Although gender bias is often subtle, its effects are not. Bias about the roles and capabilities of women and men has an adverse effect on all members of the community. Women and men need to be made aware of the obligation for and the opportunities of an education that is free of gender bias. In an era of increasing emphasis on excellence and accountability, we cannot afford to squander any of our talent.

[1] **Equal Opportunity for Women: A Statement of Policy and Proposed Action by the Regents of the University of the State of New York.** Albany, New York: The State Education Department, April 1972.

Educators have placed some emphasis on developing strategies to encourage equal participation of young men and women in mathematics, science, and vocational studies. But the recent report by the American Association of University Women, **How Our Schools Shortchange Girls**, and the work of gender education researchers identify several problem areas.

- Pervasive gender bias in classroom teaching styles by both men and women has been confirmed by research (Sadker and Sadker, 1984, 1985).
- The gender bias persists that young women are not able to think logically or to understand scientific principles to the same extent or at the same level as their male counterparts.
- Current studies about learning patterns and the intellectual development of women suggest that major revisions in curriculum and teaching are necessary to provide young women with equal access to educational and career opportunities.
- Changes in teaching strategies should reflect research evidence that girls and boys often have different learning patterns. Generally, girls favor learning via cooperation while boys learn through competition (Gilligan, Lyons and Hanmer, 1989).
- Cultural attitudes are still taught to children which presume a less significant status for women in careers, a practice that tends to perpetuate discrimination against women.

Many women are held back because of deep-rooted, persistent beliefs about the proper roles of men and women in our society. Both women and men have inappropriate stereotypes about what each can accomplish. These stereotypes limit choices and opportunities. We must take particular care to eradicate gender bias which lingers in the school curriculum in both content and methods of instruction.

Career Patterns for Women

Most women and men continue to be employed in traditional careers. Women are the majority of clerical and retail sales workers, K-12 teachers, and nurses. Men continue to hold the skilled labor jobs and dominate the engineering, science, and computer fields. This pattern has remained essentially unchanged since the position paper of 1972. Women have a disproportionate share of low-paying jobs, are frequently overqualified for their work, and do not get the same economic return on their education as men. The percentage of women in leadership positions in business, industry, the professions, politics, and civil service continues to reflect a lack of access to the level afforded men which is now known as the "glass ceiling." In addition to bias against women in positions of leadership, there is a lack of understanding and acceptance of differences in leadership styles.

Statistics clearly indicate that when there is an eligible pool of qualified women, they continue to be underrepresented in positions of advanced leadership. Women continue to earn less than men, and as national statistics for 1972 and 1989 show, the gap has been extremely slow in closing. For each dollar earned by males with the same educational attainment levels, women increased their median annual income from 1972 to 1989 as follows:

- with four years of high school, women's earnings increased from 56 to 66 cents;
- with four years of college, women's earnings increased from 59 to 69 cents; and
- with five years of college, the women's earnings increased from 65 to 69 cents.[2]

When women and men have comparable education and experience, men are often paid

[2] Source: U.S. Department of Education. **Digest of Education Statistics 1992,** Table 367, p. 391.

more. Salaries for college-educated women are still less than those of men whose education ended at high school. Women in mid-life see a greater disparity in their earnings. National statistics for 1989 confirm both these inequities:

- The median earnings for women over age 25 with 4 years of college ($21,763) were still less than those of men over age 25 whose education ended at high school ($22,378). [3]
- Women aged 25 and over with four-year college degrees received 62 cents of each dollar earned by a male counterpart.[4]

Some progress has been made in the educational preparation of women for advancement in their chosen careers. In the past, quotas on the enrollment of women and higher standards of admission for women than for men indicated a widespread bias in colleges and universities. Graduate and professional schools had poor records in admitting women and awarding them higher degrees. In the past 20 years, however, the number of women earning degrees in New York postsecondary education and graduate schools has increased dramatically:

- Associate degrees increased from 47 percent to 60 percent;
- Bachelor's degrees increased from 46 percent to 54 percent:
- First professional[5] degrees increased from 8 percent to 42 percent;
- Master's degrees increased from 47 percent to 58 percent; and
- Doctoral degrees increased from 22 percent to 40 percent.[6]

In 1989, women earned 57 percent of New York's educational administration graduate degrees and 60 percent of both the School District Administrator certificates and School Administrator and Supervisor certificates.[7] Yet, facts clearly demonstrate the limited number of women in positions of educational leadership in New York State. In 1991-92 women represented:

- 66 percent of all professional staff of the public schools, including 60 percent of teachers and 53.5 percent of nonteaching personnel;
- 8.5 percent of the superintendents;
- 1.8 percent of the secondary principals, and 37 percent of the elementary principals.[8]

There are fewer women in educational administration than there were in the early part of the 20th century. In 20 years, only one woman was appointed as district superintendent in New York State. With the recent addition of another, there are only two women district superintendents in the 41 BOCES (Board of Cooperative Educational Services) districts in the State of New York.[9]

Women are a small minority of the decision-makers in our colleges and universities. Even in women's colleges, once the province of female leadership in higher education, men are being selected as presidents and deans. Fewer women faculty are full professors; most continue to be concentrated in the lower academic ranks, and they are still often

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[3] Source: U.S. Department of Education. **Digest of Education Statistics 1992,** Table 368, p. 392.

[4] *ibid.*

[5] Degrees in dentistry, medicine, chiropractic, osteopathic medicine, optometry, pharmacy, podiatry, veterinary medicine, law, and theological professions.

[6] Sources: New York State Education Department. **New York Annual Educational Summary 1971-72,** Table 42, p. 52; and **Annual Educational Summary 1990-91,** Table 42, p. 50.

[7] Source: New York State Education Department. **Women Administrators in New York State Public Schools 1968-1991,** Table 4, p. 6 and Table 7, p. 9.

[8] Source: New York State Education Department. **Public School Professional Personnel Report 1991-92,** Table 1, p. 5; Table 4, pp. 10-11; and **Women Administrators in New York State Public Schools 1968-1991,** Table 5, p. 7.

[9] Source: New York State Education Department. Staff, Bureau of School District Organization, BOCES and Rural School Services, November 5, 1992.

recruited at lower pay than men in the same field and rank. Now the educational community must take the lead in providing women with access to a broad spectrum of career opportunities and promoting strategies for recruitment, selection, and advancement. Statistics for 1990-91 New York State postsecondary institutions raise concern about the existing disparity:

- Women were 31 percent of total postsecondary faculty;
- Women faculty with tenure were 16 percent of the total faculty of all ranks;
- Women faculty with tenure were 52 percent of all women faculty, compared to 71 percent of the male faculty who were tenured;
- Women full professors with tenure were 16 percent of the total number of full professors; and
- Women full professors had mean salaries lower than their male counterparts: for 11-12 month contracts, women earned $57,130 compared to $71,614 for men; and for 9-10 month contracts, women earned $56,648 compared to $ 62,473 for men.[10]

New Challenges

Women and men must be educated about their rights to equal access, the issue that has dominated since 1972. In the 1990s, another gender issue has been recognized by government and acknowledged as repugnant. There has been a growing awareness of the pervasiveness of sexual harassment and other sexual offenses and the damage that results. Women are the most frequent victims on college campuses, in the workplace, and in the schools.[11] The aftermath of such experiences can leave females with negative self-esteem and diminished ability to reach their full potential academically or professionally. Girls and women have now begun to internalize that their right to equitable treatment extends beyond access issues to the right to work and learn in a safe environment. As eloquently stated by Susan B. Anthony: "Men, their rights and nothing more; women, their rights, and nothing less."

[10] Source: New York State Education Department. **College & University Faculty Salary, New York State 1990-91,** Table 2, p. 8; Table 2A, p. 9; Table 3, p. 15; and Table 3A, p. 16.

[11] American Association of University Women. **The AAUW Report: How Schools Shortchange Girls,** pp. 73-74, and 78.

Regents Policy Principles to Achieve Equal Opportunity for Women

Equal opportunity for women continues to be a pressing concern. The Board of Regents reaffirms its commitment to end the double standard that makes itself evident in education, as called for by the Regents Position Paper in 1972. A Strategic Objective of **A New Compact for Learning**, the Regents strategy to improve elementary, middle, and secondary educational results in New York State, is that by the year 2000:

> ***Students of both genders and all socioeconomic and racial/ethnic backgrounds will show similar achievement on State assessment measures.***

New York State will not enjoy the full benefits of its people's talents until diversity is valued and women are encouraged, prepared, and employed in as wide a choice of careers as men. Accordingly, the Regents reaffirm the following principles:

- The Regents are committed to gender equity. We must change the way we think and act in order to achieve an educational system where leadership is gender-balanced and where schools are beacons of gender equity for a diverse society.
- Individuals will be valued and rewarded because of their competence, expertise, knowledge, motivation, and personal qualities and not because of their gender.
- In education and employment opportunities there should be no difference between the sexes, and all practices which interfere with equal opportunities for men and women must be eliminated.
- There should be statewide compliance with State and Federal Civil Rights and Equal Employment Laws and the affirmative action policies of the Federal Departments of Labor, Health and Human Services, and Education.
- Based on the premise that there are as many qualified women as men, the goal is to achieve more evenly balanced representation of women and men at all levels of administration in all educational and cultural institutions and the career work sites of our State.

Call to Action to Promote Equal Opportunity for Girls and Women

The challenge of global competition requires that society use all available talent. In seeking to remedy the existing limitations on opportunity for New York's girls and women, the Board of Regents supports the following plan of action as a systematic effort to require accountability from those who oversee components of our extensive educational community. The Board of Regents, the Commissioner, and the State Education Department will by example and initiative provide leadership and support for this effort. To effect the changes we envision, the commitment of the Board must be followed by the cooperation of members of the faculties, boards of trustees and boards of education, and administrations of our schools, colleges, and other educational institutions, as well as by parents, employers, and community members.

Several of the goals listed below are provided for in existing State and Federal statute and regulation. Instituting a law or a regulation, however, is not the same as effecting change. The Regents call upon all New Yorkers to join them in using existing laws to implement change through education and appropriate action.

In this continuing effort, the Board of Regents recognizes the value of knowledgeable advice, such as that provided by the Commissioner's Statewide Advisory Council on Equal Opportunity for Women and Girls. The Board charges the staff of the State Education Department to examine current data collection, determine what changes need to be made and what additional data are needed to carry out these action strategies, and formulate a plan, in consultation with the field, for (1) the collection of the needed data without undue burden on institutions, and (2) the dissemination of data and information so collected to institutions, parents, business and industry, and the public.

ACTION STRATEGIES:

A. *ENDING GENDER BIAS*

1. **GOAL:** The Board of Regents has amended Commissioner's Regulations to require that, effective September 1993, all prospective teachers be prepared "to work effectively with students from minority cultures, *students of both sexes* [emphasis added], students from homes where English is not spoken, students with handicapping conditions, and gifted and talented students." In keeping with this regulation, gender bias will be eliminated in teaching through revised teacher education curriculum and inservice professional development for all educators, including teachers, college faculty, staff of cultural institutions such as libraries and museums, and supervisory administrators. Such professional development should regularly include the study of gender bias, with regular monitoring and reinforcement in educational settings.

Responsible Entities: School and college faculty and administrators, including deans and faculties of schools of education, administrators and staff mem-

bers of cultural institutions such as museums and libraries, State Education Department staff

Outcome Indicators: Teaching practices are observed to be free of gender bias; reports are collected showing number of inservice training efforts; SED staff conducting academic program reviews at colleges and universities note coverage of gender bias in teacher-preparation programs; gender-specific patterns disappear in course participation and test results shown annually in the Comprehensive Assessment Reports (CAR) and the Report to the Governor and the Legislature on the Educational Status of the State's Schools (Chapter 655 Report); others

Timeline: By the year 2000

2. **GOAL:** All career opportunities will be available to female students. Their participation will increase in gateway experiences to prepare for career areas where they are underrepresented, including advanced mathematics, science, engineering, computer science/computer technology, and vocational education courses. Career counseling will focus on job skills and personal attributes. The overt and covert messages given in educational institutions will reflect each student's ability to select. Appropriate nontraditional role models are essential.

Responsible Entities: School, BOCES, and college faculty, administrators, guidance counselors, and other staff members; parents; employers; students

Outcome Indicators: Enrollment patterns by gender for vocational education programs as reported to SED's Occupational Education Reporting System (OERS), for other secondary courses as reported to Higher Education Data Systems (HEDS), for college programs as reported to HEDS

Timeline: By the year 2000

3. **GOAL:** Awareness will increase among educators, administrators of museums and other cultural institutions, employers, and parents of the need to expand career opportunities for women.

Responsible Entities: State Education Department; school and BOCES boards, administrators, and teachers; college faculty and administrators; parents, business, and industry

Outcome Indicators: Consistent increases in the number of women in careers where they are currently underrepresented, as measured by reports from the State and Federal Labor Departments, SED's professional licensure data system, and other sources

Timeline: Ongoing

B. ***IMPROVING OPPORTUNITIES FOR THE EDUCATION OF WOMEN AND GIRLS IN SCHOOLS, HIGHER EDUCATION, AND CULTURAL INSTITUTIONS***

1. **GOAL:** Schools and colleges will give female and male students equal opportunities to learn and to apply and demonstrate what they have learned. Teachers will promote all opportunities for all students in choosing texts and materials, grouping students, and other matters of practice.

Responsible Entities: School and college administrators and faculty members, other members of schools' and colleges' staff

Outcome Indicators: Teaching practices are observed to be free of gender bias; gender-specific patterns disappear in course participation and test results shown in the annual CAR and Chapter 655 reports, and in data on major fields of study reported to HEDS; others

Timeline: Starting immediately

2. **GOAL:** The State Education Department and all educational and cultural institutions will ensure an environment for learning and working that is equitable, supportive, safe, and free from sexual harassment.

   Responsible Entities: Boards, faculties, administrators, and staff of all institutions in The University of the State of New York, including the State Education Department; parents; students

   Outcome Indicators: Decrease in instances of sexual harassment and other crimes; increase in the number of programs to train students and staff in the prevention of sexual harassment; improved deployment of security forces and other safety measures

   Timeline: Starting immediately

3. **GOAL:** Boys and girls will be equally represented in the top quartile in all middle- and secondary-level studies, but particularly in mathematics. science, and vocational education.

   Responsible Entities: School and district administrators, teachers, parents, students

   Outcome Indicators: Participation and testing results provided in the annual CAR

   Timeline: By the year 2000

4. **GOAL:** Athletic programs for both sexes will receive equitable support, including financial support, salaries and levels of coaching staff, program scheduling time, and publicity.

   Responsible Entities: School and college boards, administrators, coaches, athletic directors, and sectional coordinators

   Outcome Indicators: Compliance with Title IX provisions related to school budget patterns, athletic activity scheduling patterns, and athletics personnel staffing

   Timeline: By the year 2000

C. *IMPROVING CAREER OPPORTUNITIES IN EDUCATION, CULTURAL INSTITUTIONS, AND THE PROFESSIONS*

1. **GOAL:** Affirmative action plans of educational institutions will include realistic increases and timetables for the recruitment and promotion of women in professional and managerial programs.

   Responsible Entities: Governing boards and executive officers of all New York State educational institutions

Outcome Indicators: Status reports by school district and college affirmative action officers

Timeline By the year 2000

2. **GOAL:** Practices that support, recruit, and promote women will be identified and replicated. Practices that contribute to gender bias in employment in educational and cultural institutions will be identified and eliminated.

Responsible Entities: Commissioner of Education, school boards and administrators, college administrators

Outcome Indicators: Statistics on women employed by SED, public schools and colleges and universities provided by SED Affirmative Action Office, BEDS, and HEDS.

Timeline: By the year 2000

3. **GOAL:** Personnel responsible for recruitment and career advancement of employees in schools, colleges, universities, libraries, museums, and the State Education Department will receive training in the identification, impact, and avoidance of gender bias in hiring and other employment practices.

Responsible Entities: College, library, and museum officials, school superintendents, State Education Department officials

Outcome Indicators: Consistent increases in the hiring and advancement of women until parity is reached, as determined from affirmative action reports and agency training record reports monitored by affirmative action officers

Timeline: Annually

4. **GOAL:** Colleges, universities, BOCES, school districts, and the State Education Department will use existing support networks more effectively, and will create others as needed, to promote the hiring and placement of certified women school administrators.

Responsible Entities: College, BOCES, school district, and SED administrators

Indicators: Staffing reports by gender to BEDS

Timeline: Annually

5. **GOAL:** Women will achieve equitable representation among college faculty and administrators in all areas, including schools of education.

Responsible Entities: College presidents, deans, other administrators, and faculty members

Outcome Indicators: Consistent increases in the representation of women in such positions until parity is reached, as determined by reports in SED's HEDS data collection

Timeline: By the year 2000

6. **GOAL:** The number of women in leadership positions in school districts, schools, cultural institutions, colleges and universities, and the State Education Department will rise each year until parity is achieved. Toward this goal, the Regents will press for establishment of an administrative internship program for women to prepare for and advance into leadership roles in education and the State Education Department.

   Responsible Entities: State Education Department, governing boards, university and college administrators

   Outcome Indicators: Consistent increases in the percentage of women administrators as indicated by BEDS, HEDS, reports to SED's Office of Cultural Education, and the annual SED affirmative action report

   Timeline: By the year 2000

7. **GOAL:** Women and men with comparable credentials and experience holding the same job in institutions belonging to The University of the State of New York will be paid an equal salary.

   Responsible Entities: Governing boards, administrators of educational and cultural institutions, State Education Department officials

   Outcome Indicators: Appropriate gender statistics on salaries provided by BEDS and HEDS

   Timeline: By the year 2000

8. **GOAL:** Women will receive equitable shares of the paid internships for administrative positions in the education field (K-12, higher education, cultural institutions, and SED) and in the distribution of loans, scholarships, fellowships and postgraduate stipends for teaching and research.

   Responsible Entities: Internship sponsors, financial aid administrators, providers of scholarships, selection committees

   Outcome Indicators: Records of internship and financial aid program participation by gender

   Timeline: Annually

9. **GOAL:** Research on current issues facing women will be developed, supported, and promoted; the findings will be appropriately incorporated into teacher education and school administrator certification programs.

   Responsible Entities: Programs such as the State University at Albany's Center for Women in Government; schools of education; SED

   Outcome Indicators: Incorporation of latest relevant research findings in teacher education and school administrator certification programs

   Timeline: Ongoing

Conclusion

The evidence of inequalities in this statement and the supporting background paper, **Equity for Women in the 1990s,** clearly reflects the continued deep-rooted discrimination in education and employment of women. If the patterns of inequality are to be changed, a major shift in attitude must occur in all areas of education. Affirmative action policies must be required and supported in all education institutions in our State. Activities at every level must encourage and promote equity of educational, economic, and professional outcomes. Therefore, we ask the governing boards and executive officers of these institutions to join in taking immediate action to provide and ensure equal opportunities for women.

The Regents reaffirm their commitment to gender equity and assign responsibility to monitor progress toward the stated goals to the Commissioner of Education and the State Education Department. A comprehensive report to the Regents on progress toward attainment of improvements in equal opportunities for women in New York State, as outlined in this proposed action plan, will be completed at the end of the 1996-97 school year.

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Equity for Women in the 1990s

A Background Paper Supporting the New York State Board of Regents Policy Paper and Action Plan for Equal Opportunity for Women

The University of the State of New York
The State Education Department
January 1993

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Introduction

Women and leadership are news in 1992 — not only as one component of national election campaign strategies but also as a result of recent reports. These reports include a well-publicized American Association of University Women report that provides a comprehensive look at younger female students. Other studies by the U.S. Department of Education examine women's role in education and employment. A U.S. Department of Labor report and Congressional action confirm concerns about the progress women have made in employment and acknowledge the existence of a "glass ceiling" that bars competent women from top leadership jobs. The findings of these reports document how women have actually fared, not just in employment, but also in the classrooms.

The 1990 Population Census shows that women are the majority of the population in New York State (52 percent) and the United States (51.3 percent). The research shows that today's society does not tap the full potential of women. Barriers—some subtle—exist in our schools and work sites that result in a loss to society of the talents and energies of capable women. Improving the quality of the pool of human resources the nation and State will draw upon to meet the changes and challenges of the 21st century requires recognizing and maximizing the potential of all American women.

Two decades have passed since the Board of Regents issued a position paper — **Equal Opportunity for Women**— which proposed that educational institutions take the lead in providing equal opportunity for girls and women. The 1972 document examined job opportunities, sexual stereotyping in schools, and equal opportunity for women in higher and professional education. A Commissioner's Statewide Advisory Council on Equal Opportunity for Women has operated since 1974. Its efforts prompted changes to the Education Law prohibiting discrimination in admission or course attendance at educational institutions in New York State (Section 313, Education Law).

Then, as now, women in leadership positions were of primary concern to the Board of Regents. The crucial relationship of education to employment opportunities for women has come under scrutiny. We, New York's educational policymakers, must examine our areas of responsibilities to determine whether existing practices inhibit our school girls, college women, and female employees throughout the education community. A reexamination of the status of women, a reassessment of the role of the Board and its administrative arm, the State Education Department, and a plan establishing specific goals, indicators of progress and a timetable for action are needed to address concerns raised in recent research.

Current Situation

Women have made advances in many aspects of American life, including education and the work force. Their life-styles have changed dramatically during the past two decades, as shown by results of a 1992 Population Reference Bureau report, **New Realities in the American Family**:

- Only 20 percent of American households are now classified as a traditional family: the husband as the sole wage-earner and the wife as homemaker/caregiver.
- Between 1970 and 1990, marriage rates declined 30 percent and divorce rates increased by 40 percent.
- In 1991, one in four children lived with one parent, who was five times more likely to be female than to be male.
- Births to unmarried mothers represented 11 percent of births in 1970 and 27 percent in 1991.

These statistics show some of the changes that women have faced in the past two decades. Education and employment statistics increase our understanding of the scope of change, providing benchmarks to determine how much real gain has been made and where further progress is needed.

A Protected Class

Transformations in women's life-styles have been accompanied by some positive changes in education and employment—but we are still far from parity between the sexes.

Transformations in women's life-styles have been accompanied by some positive changes in education and employment—but we are still far from parity between the sexes. As a result of Federal and state-level actions, laws, regulations, and executive directives, women have gained some protection against discrimination in employment and the educational arena.

At the Federal level, women have been protected under the following:

- Title VII of the Civil Rights Act of 1964: Defines unlawful employment practices and prohibits employment discrimination (including sexual harassment) against women and employment discrimination on the basis of race, color, religion, or national origin.
- Presidential Executive Order 11375 (1967): Amended Presidential Executive Order 11246 (1965) to add sex discrimination to those classifications protected from employment discrimination by Federal contractors and subcontractors and in Federal employment. It included women under the affirmative action mandate outlined.
- Title IX (1972): Enacted to provide equality in education, Title IX covers all schools from preschools to institutions of higher education[1]—both private and public—in areas including "curriculum, recruitment, financial aid, athletics, health care, employment opportunities, and a range of other programs." (Kaminer, 1990, p. 115)

[1] Military and religious schools and single-sex colleges were not bound.

Enforcement by the Federal government of Title VII is a responsibility of the Equal Employment Opportunity Commission, while the Office of Civil Rights within the U.S. Department of Education oversees Title IX. During the 1980s, commitment to the enforcement of both Title VII and Title IX was considered to be somewhat weakened (Morrison, 1987, p. 158; Kaminer, 1990, p. 124).[2]

New York women have other protection under State Human Rights Law, Labor Law, and Executive Law; five Executive Orders initiated by Governor Mario Cuomo have also been of importance (Appendix B). Such governmental actions have been instrumental in expanding options for women in American society. There are indications, though, that women face barriers that continue to constrain their ability to maximize their potential.

... women face barriers that continue to constrain their ability to maximize their potential.

Education Trends

Young women in our elementary and secondary schools have more options than were available in the early 1970s. Educational participation and achievement in areas where females have been traditionally underrepresented have begun to show some change. Overall, women who have dropped out of school represent a smaller part of the 14- to 34-year-old population than they did in 1970. In higher education, women made solid gains in all types of degrees conferred, reaching parity[3] for all degree levels except First-Professional and Doctoral degrees. But the gender differences are still very large, considering that females are 52 percent of the population. While educators have placed some emphasis on strategies to encourage equal participation of young men and women in mathematics, science, and vocational studies, the gender bias persists. Some people still believe that young women are not able to think logically or understand scientific principles to the same extent or at the same level as their male counterparts.

Some people still believe that young women are not able to think logically or understand scientific principles to the same extent or at the same level as their male counterparts.

Gaps in Participation and Achievement

Gender differences in mathematics and science achievement are generally recognized. However, such gaps are not limited to mathematics and science. The pervasive effects of gender bias extend to other classroom issues, e.g., computer equity and occupational education.

Twenty years ago, the Regents identified mathematics and science as fields of study that most young women give up early in school (**Equal Opportunity for Women,** Regents Position Paper No. 14, 1972, p. 6). Today efforts continue to encourage young women to enroll in higher-level science and mathematics courses. Achievement gains have been greater in mathematics than in science. Nationally, young females students' performance in mathematics is comparable to males'. However, by age 17, females lag behind their male counterparts. Mathematics achievement tests for both 1973 and 1990 show slight gender differences in test scores at ages 9 and 13. Female students at age 9 for both years, and at age 13 for the 1973 tests, scored above the males. In 1990, female 13-year-old scores were within 1.6 points of male scores. At age 17, males outscored female students by close to eight points in 1973. In 1990, the gap was reduced to 3.4 points, resulting from an increase in females' scores and a decline in males' achievement (Table 1). Additionally, a greater percentage of female high school students than of males took higher-level mathematics courses in 1990. For the highest-level courses, precalculus and calculus, no gender

Nationally, young females students' performance in mathematics is comparable to males'. However, by age 17, females lag behind their male counterparts.

[2] In February 1992, CUNY's Brooklyn College was cited for Title IX discrimination violations related to women's intercollegiate supports. In July 1992, Brooklyn College announced the elimination of the entire intercollegiate sports program for men and women as part of budget reduction efforts.

[3] Participation equal to representation in the population.

While mathematics scores for females have shown some improvement, the gender gap in mathematics is still a major concern.

differences were found in participation. Female students had greater participation (47 percent) for Algebra 2 than their male counterparts (42 percent). (Table 2) In New York, June 1991 results of Regents examinations in Sequential Mathematics III show that females had higher participation and passing rates than males, and represented a higher percentage of the average enrollment tested and passing (Table 3). Female scores on the mathematics portion of the Scholastic Aptitude Test (SAT) consistently trail male scores, although female average scores have shown greater improvement than male scores. Between 1975-76 and 1989-90, female mathematics scores increased nine points while the male scores rose two points. However, SAT mathematics scores show that females made scant inroads in gaining a larger share of top scores (600 and above) between 1975-76 and 1989-90 (Table 4).

Nationally, females' share of both undergraduate and graduate mathematics degrees increased from 40.3 percent in 1978-79 to 45.2 percent in 1988-89. During this period, undergraduate degrees in mathematics earned by women increased 42 percent and graduate degrees increased by five percent (Table 5). While mathematics scores for females have shown some improvement, the gender gap in mathematics is still a major concern.

While females consistently had greater participation than males for biology, participation of females in physics courses was consistently lower than that of males and remained close to the same level for the entire period reviewed.

In science the gap is also evident, with gains below those for mathematics. Female eighth-graders nationwide and in New York were less likely to believe that science would be useful in their future (Table 6). Student achievement scores in science for 1970 and 1990 reveal that at all ages, females scored below males (Table 7). The gender differences are evident even among nine-year-olds. While the gap in scores was reduced somewhat between 1970 and 1990 for 9- and 17-year-old female students, at age 13 the gap increased by close to three points. A review of national science participation by 17-year-old students in 1982, 1986, and 1990 shows marked changes for females in chemistry (Table 8). By 1990, female participation (45 percent) surpassed male participation (40 percent). While females consistently had greater participation than males for biology, participation of females in physics courses was consistently lower than that of males and remained close to the same level for the entire period reviewed. In New York, June 1991 Regents examinations in chemistry and physics provide insight into gender differences in participation and performance (Table 3). Females had slightly higher participation rates in chemistry but significantly lower participation in physics. Female students had lower passing rates and constituted a lower percent of the average enrollment passing both examinations.

Nationally, the female share of both undergraduate and graduate science degrees increased from 42.1 percent in 1978-79 to 45.7 percent in 1988-89. Undergraduate science degrees for women increased by 11 percent and graduate degrees by 37 percent between 1978-79 and 1988-89.

Nationally, the female share of both undergraduate and graduate science degrees increased from 42.1 percent in 1978-79 to 45.7 percent in 1988-89. Undergraduate science degrees for women increased by 11 percent and graduate degrees by 37 percent between 1978-79 and 1988-89 (Table 9). While the total science degrees earned by women increased by 15 percent, these gains were well below the rise in total mathematics degrees (Table 5).

Mathematics and science inequity has been recognized. Concern has been raised that a similar gender bias is also present in the use of computers. Inequity in computer access for girls and women limits their later educational opportunities and, ultimately, their career options. This computer gender gap surfaces by middle school and widens with age and the types of computer use. Male participation is greater in computer programming and advanced classes; females focus on computer use for word processing and introductory-level classes. Male attitudes toward computers are positive, while females tend to exhibit less confidence and enthusiasm than males. Research concludes that "students' attitudes towards computers are significantly affected by computer experience, and that differential computer experience accounts for differences in attitudes more so than gender does...Computers are not inherently biased, yet in the context they are used they can often take on characteristics that reinforce gender bias" (Marks, 1992, pp. 1 and 2). In New York State, the computer science degree trends over 20 years show some of this disparity. The percentages of computer science doctoral degrees earned by women in 1974-75 and 1990-91 are almost the same. The lack of gains for women at the doctoral level is particularly notable.

PERCENT OF COMPUTER SCIENCE DEGREES EARNED BY FEMALES NEW YORK STATE, 1970-1971, 1974-75 and 1990-1991

YEAR	BACHELOR'S	MASTER'S	DOCTORAL
1970-1971	8.8 %	14.8 %	0.0 %
1974-1975	18.1 %	15.4 %	17.4 %
1990-1991	29.4 %	32.5 %	17.5 %

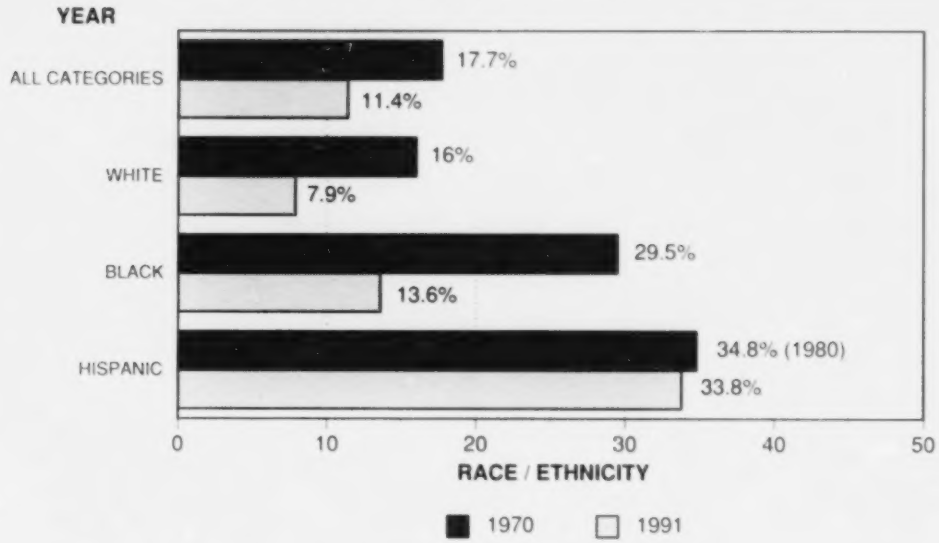
Source: New York State Education Department, Bureau of Postsecondary Statistical Services, 1992.

In New York State, the computer science degree trends over 20 years show some of this disparity. The percentages of computer science doctoral degrees earned by women in 1974-75 and 1990-91 are almost the same.

Statistical evidence confirms that gender segregation still exists in occupational education programs. In 1991-92, female students were overrepresented in occupational programs such as cosmetology (97 percent), child care (95 percent), general office clerk (77 percent), and nursing assisting (89 percent). Female occupational education students are poorly represented in courses of study that tend to offer greater career rewards, including electronics (10 percent), aircraft mechanics (8 percent), and computer-assisted drafting (18 percent).

...gender segregation still exists in occupational education programs.

PERCENTAGE OF WOMEN DROPOUTS, AGES 14–34 UNITED STATES, 1970 AND 1991



Source: *Digest of Education Statistics*, 1992, Table 99, p.110.

Dropout and Diploma Data

The importance of completing high school with the proper coursework for career preparation has taken on added significance for young women. The changes in American life-styles place more responsibility on women to be wage-earners. While the dropout picture has improved overall for women between 1970 and 1990, there is still a need for strategies to retain more young women in school until they have completed their sec-

Poverty rates for female dropouts are higher than those of their male counterparts.

ondary education. Some young women do not finish high school because they become mothers. While the teen birth rate has been declining since the mid-1970s, there has been a 10 percent increase in births to 15- to 17-year-olds (American Association of University Women, 1992, p. 37). Poverty rates for female dropouts are higher than those of their male counterparts.

Nationally, females received 50.6 percent of the high school diplomas in 1972 and 50.2 percent in 1983[4] (Digest of Education Statistics 1992, Table 95, p. 107). In 1991, females received 51.4 percent of the total high school diplomas earned by New York public and nonpublic students, 54 percent of all Regents diplomas earned, and 49.9 percent of the local diplomas awarded[5].

Higher Education

In the past 20 years, however, the number of women in postsecondary education and graduate schools has increased dramatically.

Some progress has been made in the educational preparation of women for advancement in their chosen careers. In the past, quotas on the enrollment of women and higher standards of admission for women than for men indicated a widespread bias in colleges and universities. Graduate and professional schools had poor records in admitting women and awarding them higher degrees. In the past 20 years, however, the number of women in postsecondary education and graduate schools has increased dramatically. Nationally and in New York State, the status of women's achievement in higher education, as measured by degrees conferred, illustrates the gains made. In 1988, female college enrollment was 54 percent in the United States and 55.5 percent in New York State (Statistical Abstract of the United States 1991, p. xvi). Women in New York and the nation were awarded more associate, bachelor's, and master's degrees than their male counterparts. While still not at parity for first-professional and doctorate degrees, females have made noteworthy progress. However, the gender distribution of degrees across fields, such as education and engineering, still reflects stereotypical patterns. Education continues to draw a disproportionate share of females. New York data show males receiving 15.5 percent of bachelor's degrees conferred in education in 1990-91, down from 19.5 percent in 1970-71. Engineering continues to be male-dominated. Females received 12.6 percent of bachelor's degrees conferred in engineering in 1990-91, up from one percent in 1970-71.

WOMEN AS A PERCENTAGE OF DEGREE HOLDERS, NEW YORK STATE (1972-73 AND 1989-90) AND UNITED STATES (1969-70 AND 1988-89)

Degrees Conferred	NY 1972-73	NY 1989-90	US 1969-70	US 1988-89
Associate	47.3 %	60.3 %	43.0 %	57.5 %
Bachelor's	46.4 %	54.4 %	43.0 %	52.6 %
First-professional	9.0 %	41.6 %	5.2 %	39.4 %
Master's	47.2 %	57.7 %	39.7 %	53.3 %
Doctoral	22.3 %	40.1 %	13.3 %	36.1 %

Sources: (New York) **Colleges and University Degrees Conferred 1989-90**, Table 1, p. 2. and **Annual Educational Summary 1972-73**, Table 39, p. 48; (United States) **Digest of Education Statistics 1992**, Table 278, p. 172.

[4] The most recent year available.

[5] Gender data were not collected in 1972.

Overview of Educational Attainment

Statistics provide a sense of the progress female students have made in schooling over the past two decades. The National Longitudinal Study of the High School Class of 1972 provides the data base for putting together a profile of the educational attainment of American women from the time they left high school to age 32. The cohort study enabled researchers to look at many facets of educational attainment based on six separate surveys, high school records and test scores, and postsecondary transcripts. The results as reported in **Women at Thirtysomething: Paradoxes of Attainment** show that, compared to their male counterparts, the women of the 1972 class had:

- stronger academic performance in high school than males (as measured by mean class rank);
- SAT scores on a par with men when both had studied more than two years of mathematics and science;
- continued postsecondary education at the same rate as men, although females had lower educational aspirations and plans than males;
- more scholarships to attend college than men of their class;
- more timely completion of associate or bachelor's degrees than males[6]; and
- higher grades in college regardless of field of study—including statistics and calculus[7] (p. v).

Employment Trends

Labor Market Participation

By 1989, the female share of the civilian labor force increased to 44.8 percent with a participation rate of 68.3 percent, compared to male participation of 88.8 percent.

Women have increased their presence throughout the work force. In 1970, women between 25 and 65 years of age represented 36.4 percent of the civilian labor force with a participation rate[8] of 49.0 percent, compared to a male participation rate of 93.5 percent. By 1989, the female share of the civilian labor force increased to 44.8 percent with a participation rate of 68.3 percent, compared to male participation of 88.8 percent (Statistical Abstract of the United States 1991, No. 634, p. 385). Women over 16 years of age were 45.2 percent of those employed in the United States in 1989 with a participation rate of 57.4 percent (Statistical Abstract of the United States 1991, No. 636, p. 387). Women holding master's degrees in science and engineering fields were more likely than men to be working in their field when employed (Table 10).

While women have made some gains in the past decade at the doctoral level in science and lesser gains in engineering, females still are a relatively small share of professionals in these fields

While women have made some gains in the past decade at the doctoral level in science and lesser gains in engineering, females still are a relatively small share of professionals in these fields (Table 11). Between 1977 and 1989, the percentage of employed female scientists and engineers with doctoral degrees increased for all fields reviewed. Yet, social science continues to be the field with the greatest female presence (Table 12). Between 1969-70 and 1987-88, women faculty members in higher education nationwide increased their representation from 23 to 33 percent of the total faculty (Digest of Education Statistics 1991, Table 160, p. 166). Women are the bulk of the teachers in our ele-

[6] Greater percentages of women in this 12-year study (41.5 percent) earned their associate degree in the conventional two and one-half years after high school graduation than the men (34.6 percent). More women (66.8 percent) earning their bachelor's degree in this 12-year period did so within four and one-half years after graduation than the men (54.7 percent). (p.7)

[7] Higher percentages of women bachelor's degree recipients earned A or A- grades in statistics (35.2 percent) and calculus (36.3 percent) than men earned in statistics (28.8 percent) and calculus (23.6 percent). (p. 15)

[8] Percent of the civilian population in each group in the labor force.

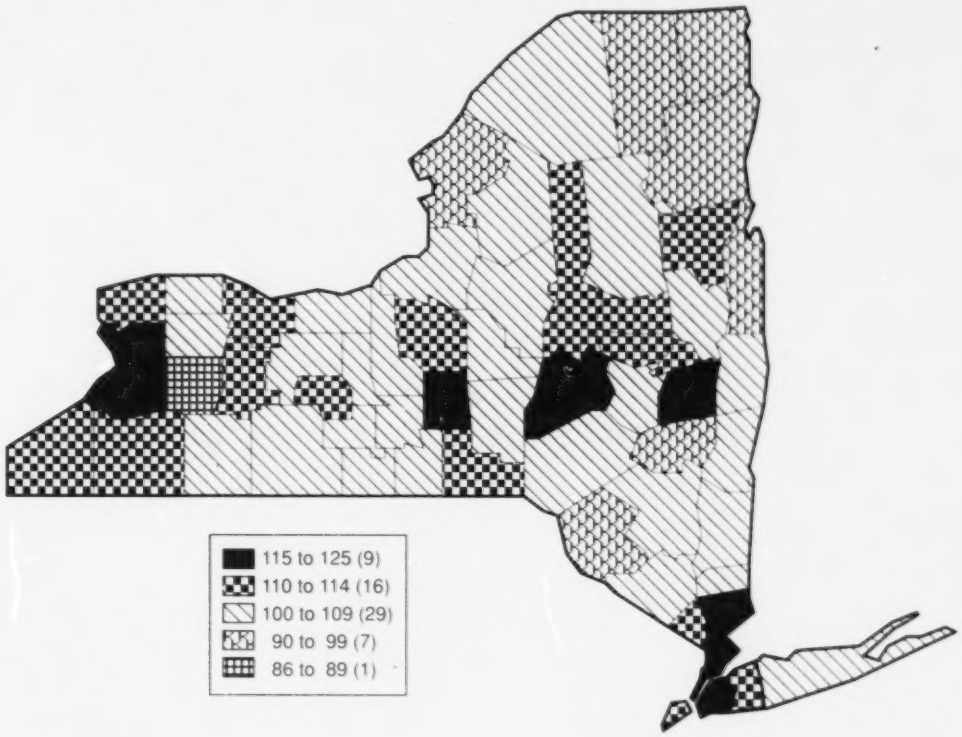
Women are the bulk of the teachers in our elementary and secondary schools, but have not yet reached parity in educational administration.

By 1991-92, women were 31.5 percent of the principals, up from 14 percent in 1972-73. Women assistant principals increased from 21.8 percent to 40 percent for the same time period.

mentary and secondary schools, but have not yet reached parity in educational administration. Nationally, 72 percent of all elementary and secondary teachers are women. Yet in 1990, only 27.7 percent of principals and 4.8 percent of superintendents in public schools were female (AAUW, 1992, p. 7).

Women employed in New York in 1989 represented 45.2 percent of all employment and had a participation rate of 52.8 percent compared to the male participation rate of 74.6 (Statistical Abstract of the United States 1991, No. 636, p. 387). In 54 of New York's 62 counties, women represented a larger share of the work force than men in 1990. At colleges and universities in New York State in 1988-89, women accounted for almost 31 percent of the full-time instructional faculty and 39 percent of the part-time instructional faculty (Table 13). Women represented 69 percent of New York State public school teachers in 1992. Some gains have been made by women since 1972 in educational administration in New York State. Women were awarded 60 percent of the graduate degrees in educational administration in 1990-91. By 1991-92, women were 31.5 percent of the principals, up from 14 percent in 1972-73. Women assistant principals increased from 21.8 percent to 40 percent for the same time period (Table 14). Women serving as independent superintendents[9] increased from 2.7 percent in 1972-73 to 6.6 percent in 1991-92, while women dependent superintendents[10] increased from 2.9 percent to 10.6 percent (Table 15).

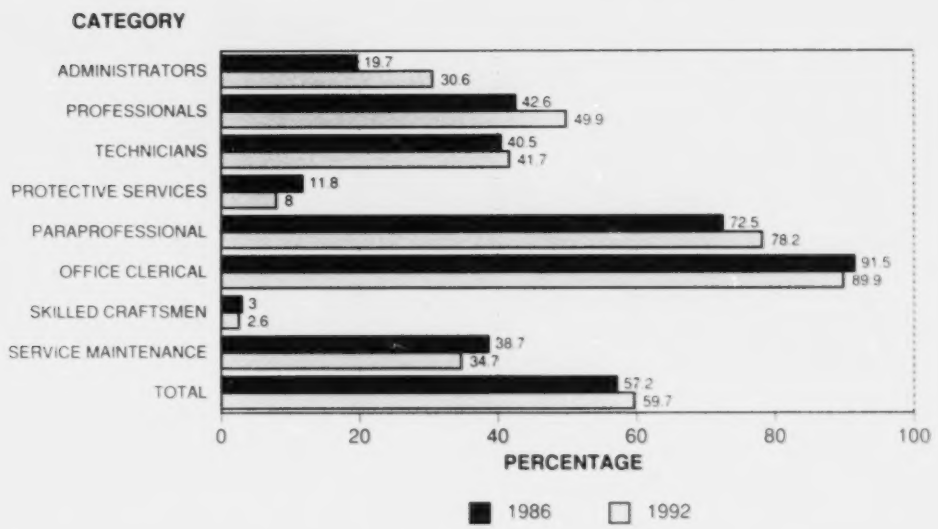
FEMALES IN THE WORK FORCE AS A PERCENTAGE OF MALES IN THE WORK FORCE BY COUNTY NEW YORK STATE, 1990



[9] Independent superintendents include 38 Community School Districts, Special School Districts, and High School superintendents in New York City, 41 Board of Cooperative Educational Services (BOCES) superintendents, superintendents of City, City Central, Independent Union Free, and Independent Central School Districts.

[10] Dependent superintendents include superintendents of Union Free, Central High School, and Common School Districts.

FEMALE WORK FORCE BY FEDERAL OCCUPATIONAL CATEGORY, NEW YORK STATE EDUCATION DEPARTMENT, 1986 AND 1992



Source: New York State Education Department.

However, given the almost 60 percent share of the total SED work force, women are still overrepresented in the lower-paying Office Clerical and Paraprofessional categories and underrepresented in the top three categories of Administrators, Professionals, and Technicians.

Women continued to increase their presence as part of the work force at the State Education Department between 1986 and 1992. They represent close to 60 percent of all employees. Within the various occupational groupings, the most significant gains occurred in the Administrators category with an increase of nearly 11 percent. Professional and Paraprofessional occupational categories also made gains of around six percent. However, given the almost 60 percent share of the total SED work force, women are still overrepresented in the lower-paying Office Clerical and Paraprofessional categories and underrepresented in the top three categories of Administrators, Professionals, and Technicians.

A look back at gender segregation in a New York State employment study in the late 1970s reveals that then, as now, occupational titles such as Office and Clerical Paraprofessional were predominantly female occupations (Peterson-Hardt, 1980, p. 7).

For both years reviewed, with one exception, the dollar difference between women and men with comparable education increased as the level of educational attainment increased.

Salaries

For those employed, the telling indicator for equity is remuneration — are income/earnings comparable for men and women with similar education levels? While women have made gains in degree attainment, men's paychecks are significantly larger than women's with comparable education. For both years reviewed, with one exception, the dollar difference between women and men with comparable education increased as the level of educational attainment increased. In 1989, that pattern resulted in dollar differentials of $9,081 at the four-year high school level, $11,856 at the four-year college level and $14,792 for those with five years of college and more (Table 16). Between 1972 and 1989 for these educational levels, women made the following modest gains:

- with four years of high school, women went from making 56 to 66 cents for a man's dollar earned;
- with four years of college, women went from making 59 to 69 cents for a man's dollar earned; and
- with five years of college and over, women went from making 65 to 68 cents for a man's dollar earned.

NUMBER, MEAN SALARY, AND TENURE STATUS OF FULL-TIME INSTRUCTIONAL FACULTY*
BY GENDER, NEW YORK STATE POSTSECONDARY INSTITUTIONS, 1990-91

GENDER	Total SUNY	Total CUNY	Total Independ.	Total Proprietary	Total State
MEN					
Total Number of Persons	8,058	3,777	10,794	71	22,700
Percent With Tenure	78.9%	82.5%	64.5%	9.9%	72.4%
Mean Salary	$48,555	$57,145	$50,225	$23,717	$50,701
WOMEN					
Total Number of Persons	3,563	2,118	4,565	61	10,307
Percent With Tenure	59.5%	69.9%	44.1%	0.0%	54.5%
Mean Salary	$39,129	$49,734	$39,272	$20,355	$41,260

Source: New York State Education Department. **College & University Faculty Salary, New York State 1990-91**, Table 2, p. 8.

* 9- to 10-month contracts.

The amount of college-level mathematics (over eight credits) that women had studied was found to be significant in reducing pay inequity.

Additional inequities surface when the 1989 median earnings are analyzed by age and gender for individuals with the same educational levels (Table 17). Women workers age 25-34 received between 56 and 76 percent of the median earnings for men with the same education. Women age 35-64 with college degrees had even lower earnings (ranging between 42 and 62 cents for each dollar earned by a man). Factors that may impact on the earnings differences include the type of employment, work experience levels, and whether the woman has children.

The **Thirtysomething** report used the National Longitudinal Study of 1972 to examine in depth the relationship between occupation, experienc,e and salaries of men and women. "In general, the lower the percentage of women who take time off for childbirth, the lower the differential...The higher the percentage of a group that takes four or more months off, the lower the mean years of experience for that group, hence the lower the earning expectation" (pp. 25-26).

GROUP	MEAN YEARS OF WORK EXPERIENCE	MEAN EARNINGS IN 1985
Men	8.0	$25,022
Women Without Children	7.8	$18,970
Women With Children	7.5	$15,016

Source: Clifford Adelman, **Women at Thirtysomething: Paradox of Attainment**, 1991, p. 23.

Overall, the earnings for women with children were found to be significantly lower although there was no big difference in experience. The earnings difference was attributed mainly to the occupations chosen by women with children. "A higher percentage of women without children were in higher paying occupations (i.e., engineer, architect, lawyer, accountant), and a higher percentage of women with children worked in lower

paying fields (i.e., nurse, health technician, teacher)." (p. 23) Higher levels of the study's women with children worked part-time (14 percent) than other study participants (seven percent). (p. 23) Women without children had more experience and higher salaries than men of the same age in occupations such as computer programmer and electrical engineering technician. The amount of college-level mathematics (over eight credits) that women had studied was found to be significant in reducing pay inequity (p. 24). The success of women entering the field of physics provides an example of how specific studies can reduce gender inequities. The American Institute of Physics found that women's median monthly starting salaries ($2,110) for members of the 1990 class with a bachelor's degree in physics were higher than males' ($2,080). Two reasons have been given to explain the salary difference favoring women. More men than women (29 percent versus seven percent) were employed by the military, and "industrial manufacturers continue to pay higher salaries to women than men" (Ellis and Mulvey, 1991, p. 6).

The American Institute of Physics found that women's median monthly starting salaries ($2,110) for members of the 1990 class with a bachelor's degree in physics were higher than males' ($2,080).

There is a great disparity in salary and tenure status between men and women instructional faculty in postsecondary institutions in New York State. Men earn higher salaries and hold tenured positions at higher rates than their female counterparts for all institutional classifications.

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The issue of comparable worth, or equal pay for equal work, was the subject of a large study in New York State government agencies. Conducted in 1984-85 by the Center for Women in Government, the study focused on job titles that were disproportionately female (67.2 percent) or disproportionately minority (30.8 percent). Study findings showed that:

> Jobs done *entirely* by women are on average two salary grades lower than jobs of equal value to the state done entirely by men. Jobs done by less than 100 percent women on average were undervalued less than two salary grades. In New York State an increase of one salary grade is an increase of approximately five percent in salary. (Steinberg et. al., 1986, p. viii)

Lower-paying jobs were more undervalued than higher-salaried jobs. Two types of analysis were conducted. When using an adjusted pay policy line,[11] 142 job titles affecting 55,000 employees were found to be undervalued by more than one-half of a salary grade. When a white male pay policy line[12] was used, the number of job titles increased to 163 and the employees affected rose to over 65,000 (p. ix). As a result of this study, female-dominated jobs were reclassified to higher salary grade levels.

Sexual Offenses Against Women

Sexual Harassment

Sexual harassment is a form of sexual discrimination. Female students and faculty are protected by Title IX and other women employees by Title VII.[13] In 1992, the U.S. Supreme Court ruled that under Title IX, students experiencing such harassment could sue schools for monetary damages (*Franklin v. Gwinnett County Public Schools*, 112 S.Ct. 1028, 60 U.S.L.W. 4167, February 26, 1992). The Civil Rights Act of 1991 recognized employees' rights to recover such damages. "Sexual harassment is particularly insidious because it copies socially acceptable or at least socially routine behavior" (Kaminer, p. 107). Sexual harassment of women exists in all settings: school, campus, and workplace.

[11] Adjusted statistically to remove the effect of female or minority composition of jobs. (p. vii)

[12] Jobs filled 90 percent by males and 90 percent by nonminorities. (p. vii)

[13] New York protections are listed in Appendix B; State Education Department policy on sexual harassment is found in Appendix C.

Within secondary schools, particularly, sexual harassment is pervasive and increasing. In a study of females taking nontraditional vocational courses, 65 percent reported that they encountered sexual harassment from male students and teachers.

Student sexual harassment is defined as "the unwelcomed verbal or physical conduct of a sexual nature imposed by one individual upon another" (AAUW, p. 73). Within secondary schools, particularly, sexual harassment is pervasive and increasing. In a study of females taking nontraditional vocational courses, 65 percent reported that they encountered sexual harassment from male students and teachers (p. 44).

The existence of such harassment toward women—faculty and students— on college campuses has been acknowledged through the adoption of sexual harassment policies and grievance procedures on many campuses (Simeone, p. 142). In some workplaces, such as SED, policies have been in place since the early 1980s (Appendix C). A 1992 Governor's Task Force on Sexual Harassment is in the process of assessing the extent to which such discrimination exists in both the public and private sectors of New York State employment.

Other Sexual Offenses

Many of the female students in our schools and college campuses go to their classrooms with the personal knowledge that the world is not a safe place for women. Data from the National Women's Study[14] have prompted a 1992 report, **Rape in America**, to conclude that "rape in America is a tragedy of youth. Twenty-nine percent of all forcible rapes occurred when the victim was *less than 11 years old*, while another 32 percent occurred *between the ages of 11 and 17*" (Crime Victims Research and Treatment Center, 1992, p. 3). The survey reported that 22 percent of the rapes occurred when the woman was between 18 and 24 years of age. Concerns have been raised about sexual offenses because "girls confront sexual abuse at four times the rate of boys" (AAUW, p. 81).

Two Federal laws — both keyed to college campuses — have been enacted in response to these issues. The Crime Awareness and Campus Security Act of 1990 requires that colleges and university campuses that receive Federal funds must issue an annual security report, beginning September 1992, to employees, students, and parents. Provisions to initiate a $10 million competitive Sexual Offenses Prevention and Education Grants program were included in the Higher Education Amendments of 1992 (Title XV). Included are the following types of programs: education seminars, peer-to-peer counseling, operation of hotlines, self-defense courses, preparation of informational materials, and other efforts to promote awareness. In New York, the issue of campus rape has been recognized by the Legislature, but consensus was not reached on legislation.

While college women have seen action, this has not happened for our younger female students. Teachers and other school personnel have the opportunity to act as a resource and referral source. Prevention at the elementary and secondary level hinges on education programs to make students aware of sexual abuse.

[14] Funded by the National Institute of Drug Abuse, this was a three-year longitudinal study of 4,008 adult American women.

The Existing Barriers

Research Outlines Current Issues

Two issues that continue to hamper women in employment are gender bias in the work place (with some roots in our education system) and sexual offenses against women (where education is a primary prevention strategy). Four recent reports demonstrate that this is not the time to be content with the status quo. There is evidence that inequalities are still prevalent in the closely entwined areas of education and employment:

- **The AAUW Report: How Schools Shortchange Girls** (American Association of University Women Educational Foundation, February 1992): Identifies the barriers in K-12 public schooling that hold girls back from reaching their potential in the work force and concludes that "there is clear evidence that the educational system is not meeting girls' needs." (p. 2)
- **Getting It Done: From Commitment to Action on Funding for Women and Girls** (Women and Foundations/Corporate Philanthropy, April 1992): While women and children are affected disproportionately by society's problems, foundation grant funding for women's and girls' issues, including education, is meager. In order "to help in a significant way—to address the historic neglect of women's concerns and their special needs today—*all grantsmaking must be gender conscious.*" (p. vi)
- **Women at Thirtysomething: Paradoxes of Attainment** (U.S. Department of Education, 1991): Analysis of the National Longitudinal Study of the High School Class of 1972 finds "that women's educational achievements were superior to those of men, but that their rewards in the labor market were thin by comparison." (p. v)
- **A Report on the Glass Ceiling Initiative** (U.S. Department of Labor, 1991): Once employed, women and minorities often find themselves hampered by internal policies in advancing to higher-level decision-making positions. "[T]he glass ceiling is most clearly defined as those artificial barriers based on attitudinal or organizational bias that prevent qualified individuals from advancing upward in their organization into management level positions." (p. 1)

Gender Bias in Education

The predominant theme of these reports is that women and girls are not afforded equal opportunity; gender bias continues to exist. Outside the home, such bias begins in the earliest stages of schooling with the stereotyping of gender roles. Awareness of the harmfulness of stereotyping has become an important issue in the 1990s. Individuals of diverse racial and ethnic groups, men and women have different perspectives (AAUW, 1992, p. 67). The male experience is used as the standard in education and public policy, rather than the perspectives of both men and women. Society and students do not gain the

The examination of school textbooks and curriculum content reveals that "[r]arely is there dual and balanced treatment of women and men, and seldom are women's perspectives and cultures presented on their own terms."

benefit from the special perspective that women can offer on societal issues, e.g., war and violence. "Using standards that arise in women's culture can guide us in our educational planning toward a more caring community and a safer world." (Noddings, 1991, p. 70)

In education, gender bias is embodied throughout areas of learning — schooling, climate, and interactions between teachers and students and among the students themselves. The examination of school textbooks and curriculum content reveals that "[r]arely is there dual and balanced treatment of women and men, and seldom are women's perspectives and cultures presented on their own terms." (AAUW, p. 62)

While some female students may not desire entry into careers in areas requiring advanced mathematics and science, efforts are necessary to ensure that barriers — both subtle and not so subtle — are not dissuading such choices and that strong foundations are provided for all students to make informed choices, so such a career can be a viable option. The choices female students make in curriculum affect their future careers. Confidence in their abilities plays a significant role in female choices related to mathematics and science course work (pp. 28-30). In the classroom, teachers pay disproportionate attention to males, particularly in science and mathematics classes (pp. 68-70). Academic assessment practices, including the SAT in mathematics, are often found to be skewed to males' experience (pp. 52-57).

In the classroom, teachers pay disproportionate attention to males, particularly in science and mathematics classes.

Mathematics and science are not the only areas of education found to shortchange female students. Some educators feel that the vocational education system fails women because:

> They have been routed into sex-stereotyped course work that leads to dead-end, low-paying jobs...It is also clear that women encounter discrimination when they enter nontraditional fields. Women trained in traditionally male jobs are less likely to be employed and more likely to earn lower wages than men receiving the same training (AAUW, p. 42).

Academic assessment practices, including the SAT in mathematics, are often found to be skewed to males' experience.

Gender Bias in Employment

As women's educational attainment has grown in the past two decades, participation by women in decision making throughout American society has not grown correspondingly. The **Thirtysomething** report supports the premise that women have great potential to be important contributors. Yet, the pay inequity experienced by women is well recognized. Many capable women settle for part-time employment because of family responsibilities, pay inequity, overt discrimination, harassment, or lack of opportunity.

The "glass ceiling" has been acknowledged as a reality. Congress, through Title II of the Civil Rights Act of 1991 (PL 102-166), established a Glass Ceiling Commission to conduct a study and make recommendations related to eliminating artificial barriers to advancement of women and minorities and to increase opportunities in management and decision-making positions in business. There is evidence that this glass ceiling also exists in state and local governments and in New York State public education administration. In the United States (1990) women represent 31.3 percent of the state and local officials and administrators; in New York State, women are 35.6 percent (Center for Women in Government, Winter 1991, p. 3). Glass ceilings also exist in school administration positions, according to a 1990 report, **A View From the Inside: An Action Plan for Gender Equity in New York State Educational Administration.**[15] Women in higher education have been outspoken about the discrimination in hiring and promotion that has been encountered (Farley, 1981).

[15] Also see Tables 8 and 9.

> The research demonstrates clearly that on the whole, institutional systems [in higher education] have outcomes which are less favorable to women than to men. More specifically:
>
> 1) ...faculty women are more likely than men to be unemployed, hold part-time or nontenure track positions, be untenured, have lower salaries, and hold lower rank;
>
> 2) Women are represented in lowest proportions at the top colleges and universities, and have their highest representation at two-year schools and small less competitive, teaching-oriented colleges; and
>
> 3) Women are more likely to be found in the less-valued and less-rewarded teaching role than the role of researcher and scholar (Simeone, 1987, pp. 143-144).

In academic and other settings, women represent a disproportionate share of lower-paying occupations and professions.

> [T]he job market remains sex-segregated in fact, if not by law, because men and women are steered to different jobs by custom, conditioning, and education. Jobs are gendered: Men drive trucks, while women type. Nearly three-quarters of all full-time women wage earners are clustered in occupations in which over three-quarters of all employees are female, and female dominated occupations pay less than those dominated by men. Full-time women wage earners are paid about 30 percent less than their male counterparts, and the wage gap increases with age, suggesting that men advance in their careers mid-life, while women stagnate. (Kaminer, 1990, pp. 97-98)

Allowing Women to Reach Their Maximum Potential

For Quality: Leadership and a Safe Work/Learning Environment

The current interest in the quality movement, exemplified by the Total Quality Management principles (Appendix D), offers hope to women in the work force. Following the tenets of TQM requires a change in philosophy. The emphasis is placed on empowering or involving employees, with a new sensitivity to the importance of the conditions of the work environment. Leadership is key to TQM, but a new kind of leadership. Originating in the corporate world, the quality movement has now moved into other arenas, including education — classrooms, faculty lounges, and college campuses.

The recognition of the need for a new leadership style heralds an opportunity for women. The move is away from hierarchial organizational structure toward teamwork; away from competitiveness and toward collaborative relationships. Such shifts in management style may create openings for women leaders. "Interactive leadership," a natural management style for many women, is characterized by encouraging employee participation (inclusion); sharing power and information with employees; and enhancing the self-worth of others (Rosener, 1990, pp. 125 and 120-123).

The importance of conditions encountered in the work and learning environment for students and staff have now been acknowledged by TQM. To work or perform at our best requires conducive surroundings. Women harmed by sexual harassment or fearful of other sexual offenses carry an additional gender burden in their efforts to reach their potential at school or work. Tolerance for such detrimental behavior is counterproductive. Action is necessary to reduce such occurrences and educate males and females of all ages in recognizing the presence of such behaviors and their harmful impact on the individual and the organization.

Research Agenda

Twenty years after the enactment of Title IX, **The AAUW Report: How Schools Shortchange Girls** provides a synthesis of research related to females in public schools. The findings are that "girls are systematically discouraged from courses of study essential to their future employability and economic well-being. Girls are being steered away from the very courses required for their productive participation in the future of America, and we are losing more than one-half our human potential." (p. v)

For schooling to get better for females, classroom teachers, school administrators, and personnel will have to learn more about female students. Research on gender-equitable curriculum and textbooks, and on the special needs of females in special education and vocational education, will be important.

For schooling to get better for females, classroom teachers, school administrators, and personnel will have to learn more about female students. Research on gender-equitable curriculum and textbooks, and on the special needs of females in special education and vocational education, will be important. Data collection that includes information by gender should become standard.

Equality of opportunity for women should not mean that somehow women are the same as men. Women and men are often very different in work and communication styles (Melia, 1989). Further research is needed in gender diversity to enable men and women to understand and appreciate each other's abilities. Understanding can only lead to improved working and learning environments.

Financial Support

Title IX requires that programs for females receive equitable support in schools receiving Federal monies. Private foundations are not bound by such requirements and may select those programs that they want to support financially. A 1992 report, **Getting It Done: From Commitment to Action on Funding for Programs for Women and Girls**, reveals that charitable grants to programs specifically for women and young females amount to just four percent of the total funding for all types of programs. This is the same percentage as found for education programs for females at the elementary and secondary level (p. v). The Women and Foundations/Corporate Philanthropy supports a Michigan policy that requires all applications for program proposals to contain an "equity impact statement" (p. 14).

A 1992 report, "Getting It Done: From Commitment to Action on Funding for Programs for Women and Girls," reveals that charitable grants to programs specifically for women and young females amount to just four percent of the total funding for all types of programs.

The State Education Department receives no State funds targeted for female-specific programs. Funding for female-specific programs is limited to the two Federal sources indicated below:

- Carl Perkins Vocational and Applied Technology Act provided $1.87 million for 1991-92 for programs providing females aged 14-25 with the opportunity to enter nontraditional occupational programs. The funds are used for guidance and counseling services to encourage increased participation in nontraditional occupations by both males and females. An additional $900,000 in Federal vocational education funds provide pregnant and parenting teens with career education and support services.
- The Department receives Federal training and technical assistance grant money annually to promote desegregation—including gender. In 1991-92, SED received $402,045 to promote racial and gender equity. These funds have been used to address Title IX complaints. Other activities providing workshops on gender-related topics, teacher's manuals, and awareness training for curriculum writers.[16]

16 Appendix E provides details of the SED gender-related topics/issues/activities.

Conclusion

The Board of Regents is committed to development of a comprehensive plan to address the obstacles — some subtle and some blatant — that act to limit young women's access to educational and career opportunities.

Since 1972 — the year of the historic passage of Title IX and the last Regents examination of the issue of equal opportunity for women — there have been some advances for women in educational attainment and positions of leadership. The gains, however, do not reflect the real potential that women possess or their numbers. There is evidence that bias and discrimination that hamper women in fulfilling their potential are reinforced in our school classrooms, college campuses, and workplaces. Once in careers, the reality of the "glass ceiling" halts advancement to top management not only in corporations, but in our educational institutions. The Board of Regents is committed to development of a comprehensive plan to address the obstacles — some subtle and some blatant — that act to limit young women's access to educational and career opportunities.

The 21st century is rapidly approaching. It is unacceptable to squander the talents of over half our citizens because the remnants of outdated stereotyping and leadership models linger. At a time when the business community and society are demanding quality education and quality in the workplace to become competitive in a global economy, success will depend in part on how women can be assisted in attaining the equal opportunities envisioned by the Regents in 1972. The accompanying **Regents Policy Paper and Action Plan for Equal Opportunity For Women** sets specific goals, indicators of progress, and a timetable for action to address the concerns raised by this reexamination of how females fare in the educational institutions of New York State.

Tables

TABLE 1

STUDENT ACHIEVEMENT SCORES IN MATHEMATICS BY AGE AND GENDER
UNITED STATES
1973 AND 1990

	1973		1990	
	Male	Female	Male	Female
9 Years Old	217.7	220.4	229.1	230.2
13 Years Old	265.1	266.9	271.2	269.6
17 Years Old	308.5	300.6	306.3	302.9

Source: National Science Board. **Science and Engineering Indicators - 1991**, Table 1-4, p. 202.

TABLE 2

PERCENTAGE OF 17 YEAR OLD STUDENTS BY HIGHEST LEVEL OF MATHEMATICS COURSE TAKEN BY GENDER
UNITED STATES
1978 AND 1990

Subject	1978			1990		
	Male	Female	Total	Male	Female	Total
Prealgebra or General Mathematics	21%	20%	20%	16%	14%	15%
Algebra 1	15%	18%	17%	16%	15%	15%
Geometry	15%	18%	16%	16%	14%	15%
Algebra 2	38%	37%	37%	42%	47%	44%
Precalculus or Calculus	7%	4%	6%	8%	8%	8%

Source: National Science Board. **Science and Engineering Indicators - 1991**, Table 1-14, p. 212.

TABLE 3

NUMBER OF STUDENTS TESTED AND PERCENT PASSING REGENTS EXAMINATIONS BY GENDER NEW YORK STATE JUNE 1991

Course	Number Tested		Percent Passing		Percent of Average Enrollment Tested		Percent of Average Enrollment Passing	
	Male	Female	Male	Female	Male	Female	Male	Female
Sequential Math III	34,054	36,195	73.7%	76.3%	35.7%	38.1%	26.4%	29.0%
Chemistry	34,447	35,636	79.8%	76.8%	36.2%	37.5%	28.9%	28.8%
Physics	20,981	16,287	87.7%	84.9%	22.0%	17.1%	19.3%	14.5%

Source: New York State Education Department. **Comprehensive Assessment Report Reference Group Summaries**, Part II, October 1991, pp. 20-21.

TABLE 4

PERCENT OF STUDENTS WITH HIGHER LEVEL MATHEMATICAL SCORES ON THE SCHOLASTIC APTITUDE TESTS BY GENDER UNITED STATES 1975-76 AND 1989-90

	1975-1976		1989-1990	
Score	Male	Female	Male	Female
600 and above	22.71%	10.11%	24.40%	12.92%
650 and above	12.70%	4.37%	14.41%	6.22%
700 and above	6.02%	1.53%	6.53%	2.12%
750 and above	1.99%	.34%	2.00%	.04%
Average Score	497	446	499	455

Source: U.S. Department of Education. **Digest of Education Statistics 1991**, Tables 123 and 125, pp. 123-124.

TABLE 5

MATHEMATICS DEGREES EARNED BY MEN AND WOMEN
UNITED STATES
1978-79 AND 1988-89

UNDERGRADUATE			
	1978-79	1988-89	% Change
Total	11,376	14,686	+29%
Men	6,589	7,869	+19%
Women	4,787	6,817	+42%
GRADUATE			
	1978-79	1988-89	% Change
Total	3,129	2,867	-8%
Men	2,071	1,755	-15%
Women	1,058	1,112	+5%
UNDERGRADUATE AND GRADUATE COMBINED			
	1978-79	1988-89	% Change
Total	14,505	17,553	+21%
Men	8,660	9,624	+11%
Women	5,845	7,929	+36%

Source: The National Education Goals Report, 1991, p. 58

TABLE 6

PERCENT OF EIGHTH-GRADERS WHO BELIEVE THAT SCIENCE WILL BE USEFUL IN THEIR FUTURE BY GENDER UNITED STATES AND NEW YORK STATE 1988

Location	Male	Female
New York State (Total)	73.0%	64.1%
Public	74.6%	64.2%
Nonpublic	65.6%	63.6%
Total United States	72.3%	65.2%
Public	72.4%	65.6%
Nonpublic	70.9%	62.4%

Source: New York State Education Department. **Characteristics of New York State's Eighth Grade Students**, Table 17, p. 41.

TABLE 7

STUDENT ACHIEVEMENT SCORES IN SCIENCE BY AGE AND GENDER UNITED STATES 1970 AND 1990

Age	1970		1990	
	Male	Female	Male	Female
9 Years Old	227.6	222.7	230.3	227.1
13 Years Old	256.8	253.0	258.5	251.8
17 Years Old	313.8	296.7	295.6	285.4

Source: National Science Board. **Science and Engineering Indicators - 1991**, Table 1-1, p. 199.

TABLE 8

PERCENTAGE OF 17 YEAR OLD STUDENTS STUDYING SCIENCE SUBJECT MATTER FOR ONE YEAR OR MORE BY GENDER UNITED STATES 1982, 1986, AND 1990

Subject	1982			1986			1990		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
General Science	63%	59%	61%	71%	67%	69%	60%	53%	56%
Life Science	29%	26%	27%	45%	34%	40%	32%	28%	30%
Physical Science	33%	33%	33%	43%	40%	41%	42%	40%	41%
Earth and Space Sciences	30%	25%	27%	41%	34%	38%	35%	34%	35%
Biology	74%	78%	76%	78%	82%	80%	82%	87%	85%
Chemistry	31%	30%	31%	34%	31%	33%	40%	45%	42%
Physics	14%	9%	11%	13%	8%	11%	12%	9%	10%

Source: National Science Board. **Science and Engineering Indicators - 1991**, Table 1-13, p. 211.

TABLE 9

SCIENCE DEGREES EARNED BY MEN AND WOMEN UNITED STATES 1978-79 AND 1988-89

UNDERGRADUATE			
	1978-79	1988-89	% Change
Total	367,412	384,607	+5%
Men	208,374	207,532	-<1%
Women	159,038	177,075	+11%
GRADUATE			
	1978-79	1988-89	% Change
Total	76,681	85,851	+12%
Men	48,913	47,769	-2%
Women	27,768	38,082+37%	
UNDERGRADUATE AND GRADUATE COMBINED			
	1978-79	1988-89	% Change
Total	444,093	470,458	+6%
Men	257,287	255,301	-1%
Women	186,806	215,157	+15%

Source: The National Education Goals Report, 1991, p. 58

TABLE 10
SELECTED EMPLOYMENT CHARACTERISTICS OF 1988 AND 1989 SCIENCE AND ENGINEERING DEGREE HOLDERS
BY GENDER
UNITED STATES
1990

Employment	All Science Fields			Mathematics/Statistics			Computer Science			Social Sciences			All Engineering Fields		
Characteristics	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
LABOR FORCE PARTICIPATION RATE															
Bachelor's Degree	97.7%	95.9%	96.9%	98.7%	94.8%	96.7%	98.9%	96.7%	98.3%	96.9%	97.4%	97.1%	99.0%	98.0%	98.9%
Master's Degree	98.8%	94.0%	96.9%	99.6%	95.9%	98.1%	99.3%	95.3%	98.2%	97.5%	88.5%	93.4%	98.1%	93.1%	97.5%
UNEMPLOYMENT RATE															
Bachelor's Degree	4.0%	3.4%	3.7%	3.1%	5.2%	4.1%	2.4%	2.6%	2.5%	3.8%	4.2%	4.0%	2.8%	2.1%	2.7%
Master's Degree	1.5%	2.6%	1.9%	1.5%	0.5%	1.1%	0.8%	3.2%	1.5%	1.2%	3.3%	2.1%	1.5%	3.2%	1.7%
INFIELD EMPLOYMENT RATE															
Bachelor's Degree	38.0%	27.7%	33.2%	31.7%	47.9%	39.6%	79.7%	86.5%	81.5%	16.6%	11.2%	14.1%	50.9%	49.8%	50.7%
Master's Degree	57.1%	63.7%	59.6%	53.3%	63.1%	57.4%	73.0%	88.8%	77.2%	38.9%	49.5%	43.5%	58.2%	54.5%	57.8%

Source: National Science Board. **Science Engineering Indicators - 1991**, Table 3-7, p. 276.

TABLE 11

DOCTORATES AWARDED BY FIELD AND GENDER
UNITED STATES
1980 AND 1990

Doctorates Awarded	1980 Degrees Conferred	Percent by Gender		1990 Degrees Conferred	Percent by Gender	
		Male	Female		Male	Female
Total, All Doctorates	31,020	69.7%	30.3%	36,027	63.7%	36.2%
Total, Science and Engineering	17,523	77.8%	22.2%	22,673	72.3%	27.7%
Total, All Sciences*	15,044	74.8%	25.2%	17,781	67.0%	32.9%
Physical Science	2,521	87.2%	12.8%	3,494	81.4%	18.6%
Mathematics	744	87.2%	12.8%	892	82.3%	17.7%
Computer Sciences	218	90.4%	9.6%	704	84.4%	15.6%
Social Sciences	3,120	73.4%	26.6%	3,146	67.1%	32.9%
Total Engineering	2,479	96.4%	3.6%	4,892	91.5%	8.4%

* Includes the following four Sciences plus Environmental Sciences, Life Sciences and Psychology.
Source: National Science Board. **Science and Engineering Indicators - 1991**, Table 2-16, p. 247.

TABLE 12

EMPLOYED DOCTORAL SCIENTISTS AND ENGINEERS BY FIELD AND GENDER UNITED STATES 1977 AND 1989

Category	1977			1989		
	Total Number	Percent Male	Percent Female	Total Number	Percent Male	Percent Female
Scientists-All Fields*	240,005	88.6%	11.4%	373,860	80.0%	20.0%
Mathematical	14,609	92.8%	7.2%	17,611	89.5%	10.5%
Computer Specialists	5,767	96.0%	4.0%	19,797	88.4%	11.6%
Social Sciences	44,908	86.7%	13.2%	70,027	78.8%	21.2%
Engineers-All Fields**	45,050	99.4%	0.6%	74,783	96.9%	3.1%
Aeronautical/ Astronautical	1,987	99.0%	1.0%	6,367	96.7%	3.3%
Electrical/ Electronic	8,284	99.5%	0.5%	15,088	97.1%	2.9%

* Scientists - All Fields includes: Physical, Mathematical, Computer Specialists, Environmental, Life, Psychologist, and Social Scientists.

** Engineers - All Fields includes: Aeronautical/Astronautical, Chemical, Civil, Electrical/Electronic, Mechanical, and other Engineers.

Source: National Science Board. **Science and Engineering Indicator - 1991**, Table 3-12, p. 286.

TABLE 13

NUMBER OF FULL- AND PART-TIME COLLEGE AND UNIVERSITY INSTRUCTIONAL FACULTY IN INSTITUTIONS OF HIGHER EDUCATION BY GENDER NEW YORK STATE 1988-89

Gender	Full-time	Part-time	Total	
Men	31,432	28,271	59,703	65%
Women	13,997	18,197	32,194	35%
Total	45,429	46,468	91,897	100%

Source: New York State Education Department. **College and University Employees New York State, 1988-89**, Table 3, p. 4.

TABLE 14

PERCENT OF WOMEN PRINCIPALS AND ASSISTANT PRINCIPALS IN PUBLIC ELEMENTARY AND SECONDARY SCHOOLS NEW YORK STATE 1972-73 AND 1991-92

Year	Principals			Assistant Principals		
	Elementary	Secondary	Total	Elementary	Secondary	Total
1972-73	18.7%	3.2%	14.0%	35.1%	10.8%	21.8%
1991-92	37.1%	17.8%	31.5%	50.6%	30.2%	40.0%

Source: New York State Education Department. **Women Administrators in New York Public Schools 1991-1992,** Table 5, p. 7.

TABLE 15

PERCENT OF WOMEN ADMINISTRATORS IN SELECTED PROFESSIONAL FIELDS IN NEW YORK STATE PUBLIC SCHOOLS 1972-73 AND 1991-92

Professional Field	1972-73	1991-92
Superintendent (Independent)	2.7%	6.6%
Superintendent (Dependent)	2.9%	10.6%
Deputy, Associate, Assistant Superintendent	7.3%	24.2%
Business Manager	7.1%	24.8%
Director/Coordinator	25.3%	47.7%
Assistant Director/Coordinator	37.0%	56.5%
Supervisor	45.8%	54.2%

Source: New York State Education Department. **Women Administrators in New York Public Schools 1991-1992**, Table 6, p. 8.

TABLE 16

MEDIAN ANNUAL INCOME* BY YEARS OF SCHOOLING COMPLETED AND GENDER
UNITED STATES
1972 AND 1989

Year	High School (4 years)		Dollar Difference	Women's Income as Percent of Men's	College (4 years)		Dollar Difference	Women's Income as Percent of Men's	College (5 years and over)		Dollar Difference	Women's Income as Percent of Men's
	Female	Male			Female	Male			Female	Male		
1972	$6,166	$11,073	$4,917	55.7%	$8,736	$14,879	$6,143	58.7%	$11,036	$16,877	$5,841	65.4%
1989	$17,528	$26,609	$9,081	65.8%	$26,709	$38,565	$11,856	69.2%	$32,050	$46,842	$14,792	68.4%

* Year-round full-time workers 25 years old and older.

Source: U.S. Department of Education. **Digest of Education Statistics 1991**, Table 357, p. 379.

TABLE 17

MEDIAN EARNINGS[1] BY YEARS OF SCHOOLING COMPLETED AND GENDER
UNITED STATES
1989

Age	All Educational Levels		Female Median Earnings compared to Male	High School (4 years)		Female Median Earnings compared to Male	College (4 years)		Female Median Earnings compared to Male	College (5 years or more)		Female Median Earnings compared to Male
	Female	Male		Female	Male		Female	Male		Female	Male	
All ages 25 and over	$14,037	$25,426	55	$11,945	$22,371	53	$21,099	$34,489	61	$26,252	$41,382	63
25 to 34 years	$13,850	$21,427	65	$11,270	$20,167	56	$21,642	$29,080	74	$23,403	$30,801	76
35 to 44 years	$15,523	$29,599	52	$12,576	$25,265	50	$20,982	$36,862	57	$27,610	$44,319	62
45 to 54 years	$15,351	$31,069	49	$13,679	$28,000	49	$21,271	$42,590	50	$29,975	$47,665	62
55 to 64 years	$11,867	$26,561	45	$11,937	$25,195	47	$17,128	$40,885	42	$22,554	$45,000	50
65 years and over	$5,807	$7,933	73	$5,618	$7,415	76	$10,831	$15,939	68	$9,416	$25,487	37

[1] For persons 25 years of age and older.

Source: U.S. Department of Education. **Digest of Education Statistics 1991**, Table 358, p. 380.

Appendices

APPENDIX A

Commissioner's Statewide Advisory Council on Equal Opportunity for Women

Dr. Rosemary Agonito
Consultant
New Futures Enterprises
Syracuse, NY

Yvette Archbald
Reference Librarian
Rochester, NY

Dr. Mary Barter
Three Villages CS
East Setauket, NY

V. Sue Davis
Superintendent of Schools
Massena, NY

Celia Diamond
State Educ. Dept.
Albany, NY

Dr. Nancy Esibill
New York University
New York, NY

Dr. Eva Gavillian
Form Foundation
New York, NY

Maxine Giacobbe
Capital Area School Dev. Assn.
Albany, NY

Dr. Helen Greene
NY Institute of Technology
Old Westbury, NY

Dr. Robert Heller
SUNY Buffalo
Amherst, NY

Dr. Dorothy Helly
Hunter College, CUNY
New York, NY

Robbie Millet
Advocate
Clinton, NY

Dr. Barbara Nagler
Superintendent
Brittonkill CSD
Troy, NY

Debbie Pepin
Student Advocate
Schenectady, NY

Theresa Pope
Buffalo City Honor School
Buffalo, NY

Theodore Repa
New York University
New York, NY

Harriette Royer
Dir. of Career Dev.
St. John Fisher College
Rochester, NY

John E. Sackett
Rens.-Columbia-Greene BOCES
Castleton, NY

Rick Thormahlen
New Berlin CSD
New Berlin, NY

APPENDIX B

Equal Opportunity for Women: New York State Laws and Executive Orders

State Laws:

New York State Human Rights Law (Executive Law, Article 15)

The Human Rights Law provides that it shall be an unlawful discriminatory practice for an employer, licensing agency, employment agency, labor organization or joint-management committee controlling apprentice training programs to discriminate against any individual on the basis of his/her age, race, creed, national origin, **sex** or disability or marital status or to make any inquiry regarding these factors.

Labor Law (Article 8, Section 220e)

All contracts with the state or municipality require the insertion of a clause by which the contractor and/or subcontractors agree not to discriminate on the basis of race, creed, color, national origin, disability or **sex** in the hiring and employment of persons.

Executive Law (Article 15-A, Section 310, et seq)

Requires that the state contract bid process solicit contractors who will not discriminate against employees or applicants for employment because of race, creed, color, national origin, **sex**, age, disability or marital status, and will undertake or continue existing programs of affirmative action and will make good faith efforts to solicit active participation by minority or women-owned business enterprises.

Gubernatorial Executive Orders

Executive Order No. 5 (2/16/83)

Established the Women's Division in the Executive Chamber.

Executive Order No. 6 (2/18/83)

Assigned responsibility to the Department of Civil Service and some other State agencies for insuring equal employment opportunities for **women**, minorities, disabled persons and Vietnam Era veterans.

Executive Order No. 19 (5/31/83)

New York State policy statement on sexual harassment in the workplace.

Executive Order No. 28 (11/18/83)

Prohibits discrimination on the basis of **sexual orientation** by a State agency or instrumentality in the provision of any services or benefits.

Executive Order No. 28.1 (4/27/87)

Amends Executive Order No. 28 to transfer investigation of discrimination complaints based on **sexual orientation** from the Governor's Office of Employee Relations to the Division of Human Rights.

Source: New York State Department of Civil Service. **The Legal Environment of Affirmative Action**, March 1990, pp. 12-13.

APPENDIX C

New York State Education Department Sexual Harassment Policy

Sexual harassment in the workplace is not merely an offensive condition; it is against the law. Like harassment on the basis of color, gender, religion, age, national origin or disability, sexual harassment is discrimination. Discrimination on the basis of gender is a violation of Title VII of the Civil Rights Act of 1964 and the New York State Human Rights Law.

Effective November 10, 1980, The Equal Employment Opportunity Commission issued guidelines designed to eliminate instances of sexual harassment in the workplace. In accordance with these guidelines, unwelcome sexual advances, requests for sexual advances, requests for favors or other verbal or physical conduct of a sexual nature will constitute sexual harassment when:

1. Submission to the conduct is either an explicit or implicit term or condition of employment; or
2. Submission to or rejection of the conduct is used as a basis for an employment decision affecting the person rejecting or submitting to the conduct; or
3. The conduct has the purpose or effect of unreasonably interfering with an affected person's work performance, or creating an intimidating, hostile, or offensive work environment.

Every State Education Department employee is entitled to a working environment free from sexual harassment. It has no place in the workplace. Ignoring the problem is tolerating the problem, and the State is determined that harassment of any sort will not be tolerated. Sexual harassment is considered to be a form of misconduct, and sanctions will be enforced against supervisory and managerial personnel who knowingly allow such behavior to exist in the workplace as well as against those persons guilty of such misbehavior.

Complaints of sexual harassment may be made orally or in writing to:

Director of Affirmative Action
Education Building, Room 152 EB
Albany, New York 12234
Phone (518) 474-1265

The Affirmative Action Office is responsible for processing complaints. Confidential investigations will be conducted and complainants will be informed of various administrative and legal remedies. The complaint process provides for follow-up to determine if the sexual harassment has been effectively stopped.

Source: New York State Education Department, Office of Affirmative Action, 1992.

APPENDIX D

Deming's Fourteen Points of Management

1. Create constancy of purpose toward improvement of product and service, with the aim to become competitive to stay in business, and to provide jobs.
2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.
3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.
4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust.
5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.
6. Institute training on the job.
7. Institute leadership. The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision of production workers.
8. Drive out fear, so that everyone may work effectively for the company.
9. Breakdown barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service.
10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force.

11a. Eliminate work standards (quotas) on the factory floor. Substitute leadership.

11b. Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership.

12a. Remove barriers that rob the hourly worker of his right of pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.

12b. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, *inter alia*, abolishment of the annual or merit rating and of management by objective.

13. Institute a vigorous program of education and self-improvement.
14. Put everyone in the company to work to accomplish the transformation. The transformation is everyone's job.

Source: W. Edwards Deming. **Out of Crisis**, pp. 23-24.

APPENDIX E

Gender-Related Activities of SED's Division of Intercultural Relations

The State Education Department has the responsibility to ensure that all students have access to equal educational opportunity without regard to race, color, creed, national origin, gender or disability. The major objectives of the Department include the reduction of racial isolation and gender segregation in schools and the improvement of human and intercultural relations in the school environment.

Staff provide technical assistance in areas related to these objectives. Upon request from school districts and associated educational agencies, workshop and conference topics can be addressed for staff development and inservice activities. The following are activities specifically related to gender:

Technical assistance is provided in the following areas:

- *Gender Desegregation:* Development of plans that lead to school integration.
- *Gender Discrimination Complaints:* Review and facilitation or referral to assist with the resolution of complaints.
- *Nonsexist Resource Materials:* Identification, development, and dissemination of administrative and classroom resources.

Workshop and Conference Topics:

- *Unconscious Classroom Bias and Student Achievement:* Awareness training for teachers on patterns of interaction for reducing unconscious bias and improving student achievement.
- *Non-Biased Recruitment, Employment and Counseling Practices:* Awareness training for administrators and/or counselors on strategies for elimination of discrimination and unconscious bias.
- *Hands-on Activities for Equity and Achievement in Math and Science:* Uses "Equals Math" classroom tested activities, materials and strategies to accommodate diverse learning styles and enhance problem solving skills.
- *Family Math Training for Parents and Their Children:* Turnkey training for conducting hands-on "Family Math" activity sessions with parents and children.
- *Women's History:* Teacher training conference on nonsexist multicultural curriculum development.
- *Title IX Compliance:* Strategies for administrators, teachers, and students in dealing with sexual harassment in school and work-study situations.

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